# **E**‰onMobil

# Mobilgard HSD CI-4 Series

ExxonMobil Marine , Cote divoire

High Performance Diesel Engine Oils

### Product Description

Mobilgard HSD CI-4 series by Mobil are extra high performance, multi-grade engine oils specifically formulated for severe service high-speed diesel engines in r applications. The advanced chemistry of these products provides outstanding performance in both modern, demanding low-emission diesel engines and older engines operating on low or high sulphur distillate fuel. Mobilgard HSD CI-4 series is approved or recommended by the major marine high-speed diesel engine bui

#### Features and Benefits

Mobilgard HSD CI-4 series combines a blend of high quality base stocks with a superior balanced additive system to provide exceptional control of oil thickening soot build-up and high temperatures, as well as outstanding resistance to oxidation, corrosion, and high temperature varnish deposits.

When used as recommended, Mobilgard HSD CI-4 series diesel engine oils provide the following features and potential benefits:

| Features  | Advantages and Potential Benefits  |  |
|---|--|--|
| High thermal and oxidation stability                | Reduces formation of deposits and sludge build-up<br>Keeps engines clean and operating smoothly              |  |
| Excellent wear protection                           | Extended life of critical engine components  |  |
| High Viscosity Index                                | Stable oil film at all operating temperatures<br>Reduced oil consumption                                     |  |
| Increased high temp/high shear performance          | Reduced engine scuffing, bore polishing and ring sticking  |  |
| Outstanding TBN retention                           | Protects engine parts from corrosive wear and deposits   |  |
| Excellent water tolerance and separation capability | Maintains effective lubrication and film-strength in the presence of water                                   |  |
| Excellent low temperature properties                | Improved oil pumpability/circulation at start-up<br>Start-up wear protection especially for valve train area |  |

#### Applications

Mobilgard HSD CI-4 series is designed to provide outstanding performance in the most severe service marine applications of modern high-speed diesel engines (s Caterpillar 3500 Series and smaller bore, Cummins, Volvo, Daihatsu, Yanmar, and others) as well as of older diesel engines operating on low or high sulphur distillat

#### Specifications and Approvals

| This product has the following approvals: | MOBILGARD HSD 15W-40 CI-4 | MOBILGARD HSD 20W-50 CI-4 |
|---|---------------------------|---------------------------|
| MTU Oil Category 2                        | X                         |                           |
| VOLVO VDS-3                               | X                         |                           |

| This product is recommended for use in applications requiring: |   |
|--|---|
| API CF   | х |
| API CF-4   | х |
| API CG-4   | х |
| CUMMINS CES 20071  | х |
| CUMMINS CES 20072  | х |
| MAN M 3275-1   | х |

| This product meets or exceeds the requirements of: |   |   |
|--|---|---|
| API CH-4   | х |   |
| API CI-4   | х | х |
| API SJ   | х |   |
| Cummins CES 20077                                  | х |   |
| ACEA E7-16   | х |   |
| CUMMINS CES 20076                                  | х |   |
| CUMMINS CES 20077                                  | х |   |
| Caterpillar ECF-2                                  | х |   |

# Properties and Specifications

| Property                                      | MOBILGARD HSD 15W-40 CI-4 | MOBILGARD HSD 20W-50 CI-4 |
|---|---------------------------|---------------------------|
| Grade   | SAE 15W-40                | SAE 20W-50                |
| Ash, Sulfated, mass%, ASTM D874               | 1.3                       | 1.1                       |
| Density @ 15 C, kg/l, ASTM D4052              | 0.869                     | 0.88                      |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 223                       | 227                       |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 14.2                      | 19                        |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445  | 109                       | 169                       |
| Pour Point, °C, ASTM D97                      | -33                       | -30                       |
| Total Base Number, mgKOH/g, ASTM D2896        | 10                        | 9                         |
| Viscosity Index, ASTM D2270                   | 133                       | 130                       |

# Health and Safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.as

# Mobilgard HSD CI-4 Series

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#### http://www.exxonmobil.com

Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly

